REMARKS

Claims 1-82 were presented for examination in the present application. In the Office Action dated March 4, 2004, the Examiner rejected claims 1-82 for being obvious in light of prior art. In view of the following remarks, Applicants respectfully requests reconsideration of the application.

Rejections Under §103

Independent claim 1 and dependent claims 2-40 stand rejected under 35 U.S.C. §103(a) as being unpatentable over USPN 5,867,495 to Elliott et al. (hereinafter "*Elliott*") in view of USPN 5,371,807 to Register et al. (hereinafter "*Register*") in further view of USPN 5,878,385 to Bralich et al. (hereinafter "*Bralich*") and in further view of USPN 5,745,652 to Bigus (hereinafter "*Bigus*"). Applicants respectfully traverse this rejection.

Claim 1 recites, in part, "a ***modeling engine*** configured to ***analyze*** a communication received by the contact center ***and determine an intent*** of the received communication." The Examiner contends that *Elliot* teaches "analysis of customer calls received by the customer contact center" (column 22, lines 13-22). However, the relevant portion of *Elliott* cited by the Examiner merely refers to a context server which "accepts network event records and service event records ... and allows for queries against the data." Thus, *Elliott* does not analyze the communication, but merely allows for a query against the data in the server. Furthermore, *Elliott* does not disclose a modeling engine configured to analyze the communication. In fact, there is no discussion of a modeling engine at all in *Elliott*.

Applicants further contend that a second relevant portion of *Elliott* cited by the Examiner (col. 22, lines 29-35) also fails to disclose a modeling engine configured to analyze a communication. The cited portion merely discloses an analysis services component, which is "a special kind of service engine...based on adding value based upon network statistics or call context information in real time or near real time,"

Moreover, *Elliott* specifically teaches adding value based on **external** parameters to the communication, because inherently in *Elliott* there is no analysis of the actual **content** of the communication. It is unclear to Applicants how the foregoing description can be construed as teaching a modeling engine that analyzes a communication.

Regarding the claim language to "determine an intent of the received communication," the Examiner relies on *Elliott* for providing this element. However, the relevant portion of *Elliott* cited by the Examiner (column 68, lines 14-23) merely discusses converting text messages to speech. Applicants fail to see how converting text messages to speech is equivalent to determining an intent of the received communication.

Claim 1 further recites, in part, "an adaptive knowledge base configured to store models," which are updatable using feedback. Examiner contends that *Register* teaches the adaptive knowledge base element. However, the element in *Register* which the Examiner equates to be the adaptive knowledge base (i.e., domain specific knowledge base) does not store (created) models of different types of data which are updatable by feedback. In fact, the "information stored in the knowledge base is provided by an applications programmer who is charged with developing the application" (column 4, lines 41-44), and consists of modules such as a lexicon and a rule base.

Additionally, claim 1 recites "a feedback module configured to ***analyze a response*** to the received communications and provide feedback to the modeling engine, which uses the feedback to update the models..." The Examiner contends that *Register* teaches a "modeling engine using feedback (Figs. 1 and 3; column 3, lines 37-51)." While *Register* may provide a feedback module, the feedback module of *Register* only analyzes input text, not responses to communications. Further, *Register* does not provide a modeling engine which receives the feedback and uses the feedback to update the models in the adaptive knowledge base.

The Examiner further notes that *Bigus* teaches a "modeling engine using feedback." However, *Bigus* is directed to resource allocation using neural networks. Applicants fail to see how resource allocation is related to providing feedback to a modeling engine which uses the feedback to update models in the adaptive knowledge base.

Applicants note that the Examiner has not responded to Applicants' previous argument that it would not be obvious to one of ordinary skill in the art to combine the teachings of *Elliott, Register,* and *Bralich,* and *Bigus* to produce the claimed invention. We note first that it is highly questionable that *Elliott* should be considered analogous prior art. The problem solved by *Elliott,* namely routing, billing, monitoring and reporting of calls in a hybrid switched/IP network, is unrelated to the problem solved by the claimed invention, namely the generation and adaptation of models to analyze and automatically respond to communications in a contact center environment. Applicants therefore contend that *Elliott* is not reasonably pertinent to the field of endeavor embodied by the claimed invention, and that an obviousness rejection that relies on *Elliott* is improper.

Even if one assumes, arguendo, that *Elliott* is analogous art, the Examiner fails to show the requisite motivation to combine the features of *Elliott* with those of *Register, Bralich,* and *Bigus*. As noted above, *Elliott* is directed to the problem of routing and administering calls in a hybrid network. In contrast, *Register* and *Bralich* are directed to computer-based methods for parsing and classifying natural language texts, while *Bigus* is directed to resource allocation. The portions of *Elliott* cited by the Examiner do not mention transmission or analysis of communications in the form of natural language texts. It is unclear why one of ordinary skill in the art would be motivated to modify the network of *Elliott* with the natural language processing tools of *Register* and *Bralich* in view of the fact that the operation of the network of *Elliott* does not involve the transmission and analysis of natural language texts. Applicants respectfully submit

that the alleged motivation offered by the Examiner in support of his rejection ("increasing management and control abilities", "better accuracy", "decreasing costs without compromising quality" and "speeding up computation") merely represent abstract objectives, rather than concrete suggestions of how the teachings may be combined to solve specific problems. In the absence of any demonstrated suggestion or motivation to combine references, the combination of features from *Elliott, Register, Bralich,* and *Bigus* by the Examiner to reconstruct the claimed invention (i.e., using hindsight reconstruction) is impermissible, and does not support a determination of obviousness.

Furthermore, merely citing references which contain similarly named system elements does not result in the claimed invention. While terms similar to "contact center," "modeling engine," "knowledge base," and "feedback module" are found in the cited art, the environment in which these elements are utilized along with their functionality are different than that of the present invention and from the other cited art. As such, there is no motivation or suggestion to combine these prior art to obtain the present invention, nor would the combination of these elements result in the present invention as recited in claim 1. Therefore claim 1 is not obvious in light of the prior art. Additionally, because claims 2-40 depend from claim 1, claims 2-40 are allowable for the same reasons as claim 1. If Examiner maintains this rejection, Applicant would appreciate a more detailed reason/analysis.

Independent claim 41 and dependent claims 42-54 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Elliott* in view of USPN 5,890,142 to Tanimura et al. (hereinafter "*Tanimura*"), *Register,* and *Bralich.* Applicants respectfully traverse this rejection as applied to the amended claims.

Claim 41, recites a step of "analyzing the communication at a computer attached to the computer network ***to determine an intent.***" The Examiner argues that this step is

taught by *Elliott*. However, Applicants respectfully contend that such a teaching is absent from *Elliott*. The cited portions of *Elliott*, parts of which are reproduced above in connection with the discussion of claim 1, sets forth a highly generalized description of the analysis services and other special services functional components of an ISP platform. With respect to the analysis services component, *Elliott* discloses only that the component "add[s] value based upon network statistics or call context information in real time or near real time." It is unclear how this statement could be construed as disclosing or suggesting the claimed step of analyzing a communication to **determine an intent**. Similarly, the description of the other special services component does not include any text would could be construed as teaching the aforementioned step.

Claim 41 further recites steps of "predicting a response to the communication based on the intent, producing a predicted response," "preparing a response to the communication, producing an actual response," and "comparing the actual response to the predicted response to improve subsequent predictions." Applicants traverse the Examiner's argument that *Tanimura* teaches the foregoing steps.

Tanimura is directed to an apparatus for monitoring a complex dynamic system (example of which provided by *Tanimura* include a turbine) and detecting, using an application of deterministic chaos theory, whether the system is in an abnormal condition. *Tanimura* discloses deriving a predicted value of timeseries data, measuring an actual value of timeseries data, and comparing the actual value to the predicted value to determine if an abnormal condition exists. The derivation of predicted data and comparison to actual data, as performed in *Tanimura*, is not the equivalent of and is easily distinguishable from the claimed sequence of predicting a response to a communication based on an intent, preparing an actual response to the communication, and comparing the actual response to the predicted response.

Specifically, the Examiner cites column 1, lines 53-58 for support that *Tanimura* teaches "predicting a response to the communication based on the intent, producing a

predicted response." However, this citation only refers to generating "data vectors whose parameter is determined by the timeseries data of the data storage section." There is no discussion of **predicting a response to a communication based on the intent**, nor is there any discussion of **producing the predicted response** to the communication based on the intent.

Next, the Examiner cites column 1, lines 66-67 for support that *Tanimura* teaches "preparing a response to the communication." However, this section only refers to "executing a decision of the abnormality according to the condition of the observation system." There is no discussion of preparing a response to the communication and producing an actual response.

Finally, the Examiner cites column 1, lines 58-65 for support that *Tanimura* teaches "comparing the actual response to the predicted response to improve subsequent predictions." However, this portion of *Tanimura* refers to comparing "the detected value and the predicted value of the timeseries data and decides the condition of the observed system according to the compared result." Determining the condition of a system is not equivalent to improving subsequent predictions as claimed in claim 41.

Regarding the Examiner's argument that *Register* teaches improving subsequent predictions, Applicants traverse. *Register* does not improve subsequent predictions based on a comparison of "the actual response to the predicted response" to a communication based on intent.

Applicants also note that the Examiner did not response to Applicants' contention that it would not be obvious to one of ordinary skill in the art to combine the teachings of *Elliott, Tanimura, Register,* and *Bralich* to produce the claimed invention. As noted above, it is Applicants' position that *Elliott* should not be considered analogous prior art. The pertinence of *Tanimura* to the claimed invention is even more doubtful. *Tanimura* is directed to a problem wholly unrelated to the problem solved by the

claimed invention. More specifically, *Tanimura* relates to a technology for monitoring the behavior of a dynamic system, such as shaft vibrations of a turbine, and determining if an abnormal condition is present by comparing measured data with predicted data. *Tanimura* does not concern in any manner the generation and adaptation of models to analyze and automatically respond to communications in a contact center environment, as does the claimed invention. Applicants therefore contend that *Tanimura,* as well as *Elliott,* are not reasonably pertinent to the field of endeavor embodied by the claimed invention, and that an obviousness rejection that relies on these references is improper.

Furthermore, the Examiner fails to show the requisite motivation to combine the features of *Elliott* with those of *Tanimura, Register,* and *Bralich.* As noted above, *Register* and *Bralich* are directed to computer-based methods for parsing and classifying natural language texts. Both *Elliott* and *Tanimura* do not mention transmission or analysis of communications in the form of natural language texts. It is unclear why one of ordinary skill in the art would be motivated to modify the network of *Elliott* with the natural language processing tools of *Register* and *Bralich* in view of the fact that the operation of the network of *Elliott* and of the monitoring system of *Tanimura* do not involve the transmission and analysis of natural language texts. Applicants again argue that the alleged motivation offered by the Examiner in support of his rejection ("increasing management and control abilities", "better accuracy", "decreasing costs without compromising quality" and "speeding up computation") represent abstract objectives, rather than concrete suggestions of how the teachings may be combined to solve specific problems. In the absence of any demonstrated suggestion or motivation to combine references, the combination of features from *Elliott, Tanimura, Register* and *Bralich* by the Examiner constitutes impermissible hindsight reconstruction, and does not support a determination of obviousness.

For the above reasons, claim 41 is not obvious over the cited prior art, and thus is allowable. Additionally, because claims 42-54 depend from claim 41, these claims are allowable for the same reasons as set forth in connection with claim 41.

Independent claim 55 stands rejected under 35 U.S.C. §103(a) as being unpatentable over *Elliott* in view of *Register*, *Bralich*, and *Bigus*. Applicants respectfully traverse this rejection.

Claim 55 recites, in part, "analyzing the relationship event to ***identify concepts*** in the relationship event." Assuming, arguendo, that the network events of *Elliott* may be construed as relationship events, we note that *Elliott* fails to teach or suggest a step of analyzing the network event to identify concepts therein. The cited portions of *Elliott* have been previously discussed above as lacking similarity with the present invention. Specifically, the Call Context Server of *Elliott* merely accepts network event records and allows for queries against the data. It does not disclose identifying concepts of the relationship event itself. For example, the statement "the book is on the table" contains the concepts "book" and "table." (page 15, lines 7-8).

Claim 55 additionally recites the step of "building an event model of the relationship event ***using the concepts***." The Examiner relies on col. 68, lines 14-23 of *Elliott* for teaching the use of the concept. The cited portion of *Elliott* is directed to a converting text messages to speech. The cited portion lacks any discussion of building an event model of the network event (the equivalent of the relationship event) using concepts identified in the network event. Therefore, Applicants submit that the step of "building an event model of the relationship event using the concepts" is not in fact disclosed or suggested by *Elliott*.

Furthermore, the Examiner still fails to show the requisite motivation to combine the features of *Elliott* with those of *Register* and *Bigus*. As noted above, *Elliott* is directed to the problem of routing and administering calls in a hybrid network, *Register* is

directed to computer-based methods for parsing and classifying natural language texts, and *Bigus* is directed to resource allocation. Applicants submit that one of ordinary skill in the art would not be motivated to modify the network of *Elliott* with the natural language processing tools of *Register* in view of the fact that the operation of the network of *Elliott* does not involve the transmission and analysis of natural language texts. Nor would one skilled in the art further combine *Bigus* with *Elliott* and *Register*. In the absence of any demonstrated suggestion or motivation to combine references, the combination of features from *Elliott*, *Bigus*, and *Register* to reconstruct the claimed invention (i.e., using hindsight reconstruction) is impermissible, and does not support a determination of obviousness.

For at least the above stated reasons, claim 55 is not obvious in light of the prior art, and should be allowed.

Examiner did not provide a reason as to why independent claim 56 and dependent claims 57-58 remain rejected. Applicants will assume that claims 56-58 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Elliott* in view of *Tanimura*, *Register* and *Bralich*. Claim 56 is a close analog of claim 41, and Applicants traverse the rejections of claim 56-58 for the same reasons discussed above in connection with claim 41.

Examiner did not provide a reason as to why independent claim 59 stands rejected. Applicants will assume that claim 59 is rejected under 35 U.S.C. §103(a) as being unpatentable over *Elliott* in view of *Register*, *Bralich*, and *Bigus*. Claim 59 is a close analog of claim 55, and Applicants traverse the rejection of claim 59 for the same reasons discussed above in connection with claim 55.

Examiner did not provide a reason as to why independent claim 60 remains rejected. Applicants will assume that claim 60 is rejected under 35 U.S.C. §103(a) as being unpatentable over *Elliott* in view of *Tanimura, Register,* and *Bralich.* Claim 60 is a close analog of claim 41, and Applicants traverse the rejection of claim 41 for substantially the same reasons discussed above in connection with claim 41.

Examiner did not provide a reason as to why independent claim 61 and dependent claim 62 stand rejected. Applicants will assume that claims 61-61 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Elliott* in view of *Register.* Applicants note that claim 61 contains all of the limitations set forth in claim 1 as well as further limitations. Applicants therefore traverse the rejections of claims 61-62 for at least the same reasons discussed above in connection with claim 1.

Independent claim 63 and dependent claims 64-72 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Elliott* in view of *Tanimura, Register, Bigus, Bralich,* and further in view of USPN 5,493,677 to Balogh et al. (hereinafter "*Balogh).* Applicants traverse these rejections.

Claim 63 recites a step of "analyzing content of the communication on a computer to ***identify at least one concept*** of the communication." As previously discussed, *Elliott* does not teach identifying concepts. The cited portion of *Elliott* merely sets forth a highly generalized description of the analysis services and other special services functional components of an ISP platform. With respect to the analysis services component, Elliott discloses only that the component "add[s] value based upon network statistics or call context information in real time or near real time." This broad statement does not amount to teaching the claimed step of analyzing content of the communication on a computer to identify at least one concept of the communication.

Similarly, the description of the other special services component does not include any text that could be construed as teaching the aforementioned step.

Claim 63 further recites a step of "creating a model of the communication using the at least one concept." The Examiner relies on col. 68, lines 14-23 of *Elliott* for teaching the use of the concept. In fact, *Elliott* does not contemplate the use of concepts. The cited portion of Elliott is directed to a converting text messages to speech. The cited portion lacks any discussion of building a model of the communication using the at least one concept. Therefore, Applicants submit that the step of "creating a model of the communication using the at least one concept" is not in fact disclosed or suggested by *Elliott*.

Claim 63 also recites steps of "preparing an actual response to the communication" and "comparing the predicted response and the actual response to produce feedback." Applicants traverse the Examiner's argument that *Tanimura* teaches the foregoing steps. As discussed above, *Tanimura* is directed to an apparatus for monitoring a complex dynamic system and detecting, using an application of deterministic chaos theory, whether the system is in an abnormal condition. The Examiner cites col. 1, lines 53 to col. 2, line 4 of *Tanimura* as support for the position that *Tanimura* teaches the claimed steps. Applicants disagree that a fair reading of the cited portion of *Tanimura* produces the requisite teachings. Instead, *Tanimura* discloses deriving a predicted value of timeseries data, measuring an actual value of timeseries data, and comparing the actual value to the predicted value to determine if an abnormal condition exists. The derivation of predicted data and comparison to actual data, as performed in *Tanimura*, is not the equivalent of and is easily distinguishable from the claimed sequence of producing a predicted response to a communication by comparing a model of the communication to a set of adaptive models, preparing an actual response to the communication, and producing feedback by comparing the actual/predicted response to the communication.

Furthermore, the Examiner still fails to show the requisite motivation to combine the features of *Elliott* with those of *Tanimura, Register, Bralich, Bigus,* and *Balogh.* As noted above, *Register* and *Bralich* are directed to computer-based methods for parsing and classifying natural language texts; *Balogh* is directed to an image archiving and retrieval process that utilizes natural language processing to identify concepts in user queries; and *Bigus* is directed to a neural-net based controller for dynamically allocating resources in a computer system. *Elliott* does not mention transmission or analysis of communications in the form of natural language texts. It is unclear why one of ordinary skill in the art would be motivated to modify the network of *Elliott* with the natural language processing tools of *Register, Bralich,* and *Balogh* in view of the fact that the operation of the network of *Elliott* and of the monitoring system of *Tanimura* do not involve the transmission and analysis of natural language texts. Applicants yet again argue that the alleged motivation offered by the Examiner in support of his rejection ("increasing management and control abilities", "better accuracy", "decreasing costs without compromising quality" and "speeding up computation") represent abstract objectives, rather than concrete suggestions of how the teachings may be combined to solve specific problems. In the absence of any demonstrated suggestion or motivation to combine references, the combination of features from *Elliott, Tanimura, Register, Bralich, Bigus* and *Balogh* by the Examiner constitutes impermissible hindsight reconstruction, and does not support a determination of obviousness. Applicants also argue that the *Bigus* reference is not in a field reasonably pertinent to that of the claimed invention.

For at least the foregoing reasons, Applicants submit that claims 63-72 are not made obvious by the prior art relied on by the Examiner.

Examiner has not provided a reason as to why independent claim 73 and dependent claims 74-77 remain rejected. Applicants will assume claims 73-77 stand

rejected under 35 U.S.C. §103(a) as being unpatentable over *Elliott* in view of *Tanimura, Bigus, Register, Bralich* and *Balogh*. Applicants note that claim 73 contains all of the limitations set forth in claim 1 as well as further limitations. Applicants therefore traverse the rejections of claims 73-77 for at least the same reasons discussed above in connection with claim 1.

Independent claim 78 and dependent claims 79-81 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Elliott* in view of *Tanimura, Bigus, Register, Bralich* and *Balogh*. Applicants traverse these rejections as applied to the amended claims.

Claim 78 recites a step of "creating a model of the communication." The Examiner relies of *Bigus* (Figs. 2, 4, and 5A) for this teaching. While these figures of *Bigus* show a system model and neural network model, they do not disclose **creating a model of the communication**.

Claim 78 also recites "comparing the model of the communication to a set of adaptive models to produce a predicted action in response to the communication." The Examiner argues this element is disclosed by *Register*. However, *Register* does not disclosure models of communication and the comparison of adaptive models to predicted action in response to the communication.

Claim 78 also recites "comparing the predicted action with an actual action in response to the communication to produce feedback." Applicants traverse the Examiner's argument that *Tanimura* teaches the foregoing steps. As discussed above, *Tanimura* is directed to an apparatus for monitoring a complex dynamic system and detecting, using an application of deterministic chaos theory, whether the system is in an abnormal condition. The Examiner cites col. 1, lines 53 to col. 2, line 4 of *Tanimura* as support for the position that *Tanimura* teaches the claimed steps. Applicants disagree that a fair reading of the cited portion of *Tanimura* produces the requisite teachings. Instead, *Tanimura* discloses deriving a predicted value of timeseries data, measuring an

actual value of timeseries data, and comparing the actual value to the predicted value to determine if an abnormal condition exists. The derivation of predicted data and comparison to actual data, as performed in *Tanimura,* is not the equivalent of and is easily distinguishable from the claimed sequence of producing a predicted action in response to the communication based on comparing the model of the communication to a set of adaptive models, and comparing the predicted action with an actual action.

Furthermore, the Examiner still fails to show the requisite motivation to combine the features of *Elliott* with those of *Tanimura, Register, Bralich, Bigus* and *Balogh.* As noted above, *Register* and *Bralich* are directed to computer-based methods for parsing and classifying natural language texts; *Balogh* is directed to an image archiving and retrieval process that utilizes natural language processing to identify concepts in user queries; and *Bigus* is directed to a neural-net based controller for dynamically allocating resources in a computer system. *Elliott* does not mention transmission or analysis of communications in the form of natural language texts. It is unclear why one of ordinary skill in the art would be motivated to modify the network of *Elliott* with the natural language processing tools of *Register, Bralich* and *Balogh* in view of the fact that the operation of the network of *Elliott* and of the monitoring system of *Tanimura* do not involve the transmission and analysis of natural language texts. Applicants yet again argue that the alleged motivation offered by the Examiner in support of his rejection ("increasing management and control abilities", "better accuracy", "decreasing costs without compromising quality" and "speeding up computation") represent abstract objectives, rather than concrete suggestions of how the teachings may be combined to solve specific problems. In the absence of any demonstrated suggestion or motivation to combine references, the combination of features from *Elliott, Tanimura, Register, Bralich, Bigus,* and *Balogh* by the Examiner constitutes impermissible hindsight reconstruction, and does not support a determination of obviousness. Applicants also

argue that the *Bigus* reference is not in a field reasonably pertinent to that of the claimed invention.

For at least the foregoing reasons, Applicants submit that claims 78-81 are not made obvious by the prior art relied on by the Examiner.

Finally, independent claim 82 is rejected for the same reasons as claim 78. Applicants traverse this rejection for the same stated reasons as set forth above with respect to claim 78.

If the Examiner maintains any of the above rejections, Applicants would appreciate a more detailed analysis of how the elements cited in the various prior art are equivalent to elements in the claimed invention and render the claimed invention obvious. Applicants would also appreciate reasons as to why one skilled in the art would be motivated to combine the cited prior art references to obtain the claimed invention

CONCLUSION

In accordance with the above remarks, Applicants believe that the rejections in the Office Action dated March 4, 2004 are fully overcome, and that the Application is in condition for allowance. If the Examiner has questions regarding this case, he is invited to contact the Applicants' undersigned representative at the number given below.

Respectfully Submitted,

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